

CRPAQS Pollution Episodes and Periods of Interest

CRPAQS PM Episodes

For the purpose of this discussion an episode is defined as a complete period, from the beginning of the buildup through the dissolution, during which the peak PM concentrations exceeded one or both of the following standards:

- 1) The federal 24-hour PM_{2.5} standard of 65 ug/m³.
- 2) The federal 24-hour PM₁₀ standard of 150 ug/m³.

All but two of the episodes listed below entailed exceedances of the PM_{2.5} standard. The two exceptions, which involved exceedances of both standards, are underlined.

- December 1999
 - Early December 1999 (12/1/99 – 12/8/99)
 - Mid December 1999 (12/10/99 – 12/13/99)¹
 - Mid December 1999 to Early January 2000 (12/14/99 – 1/2/00)
- Early to Mid January 2000 (1/2/00 – 1/12/00)
- Mid to Late November 2000 (11/15/00 – 11/29/00)
- Early to Mid December 2000 (11/30/00 – 12/13/00)
- Mid December 2000 to Early January 2001 (12/18/00 – 1/8/01)
- Mid January 2001 (1/12/01 – 1/24/01)
- Late January to Early February 2001 (1/26/01 – 2/7/02)

Table 1 summarized the strength and duration of CRPAQS PM Episodes.

Table 1
Duration and Strength of CRPAQS PM Episodes

| Episode Dates | Peak Concentration (ug/m ³) | | SJV Days Above 24-hr NAAQS | | Peak Site | |
|---------------------|---|-------------------|----------------------------|-------------------|------------------|-------------------|
| | PM ₁₀ | PM _{2.5} | PM ₁₀ | PM _{2.5} | PM ₁₀ | PM _{2.5} |
| 12/1/99 – 12/8/99 | 90 | 73 | 0 | 1 | COP | FSF |
| 12/10/99 – 12/13/99 | 134 | 63 | 0 | 0 | BGS | FSF |
| 12/14/99 – 1/2/00 | 174 | 129 | 2 | 18 | COP | FSF |
| 1/2/00 – 1/12/00 | 147 | 138 | 0 | 6 | VCS | FSF |
| 11/15/00 – 11/29/00 | 145 | 112 | 0 | 8 | BGS | CLO |
| 11/30/00 – 12/13/00 | 127 | 99 | 0 | 7 | VCS | FSF |
| 12/18/00 – 1/8/01 | 208 | 179 | 3 | 15 | BGS | EDI |
| 1/12/01 – 1/24/01 | 127 | 120 | 0 | 7 | BAC | BGS |
| 1/26/01 – 2/7/01 | 101 | 110 | 0 | 4 | BGS | FSF |

¹ This period is included as part of an overall buildup in concentrations in December of 1999, but the PM₁₀ and PM_{2.5} concentrations did not exceed the standards.

CCOS Episodes

The episodes listed below were identified as main CCOS ozone episodes. They are important for examining the relationship between PM10 and PM2.5 variations and other pollutants.

- June 2000 (6/14/00 – 6/15/00)
- Late July to Early August 2000 (7/30/00 – 8/2/00)
- Mid September 2000 (9/17/00 – 9/20/00)

Table 2 summarizes PM measurements during CCOS Episodes.

Table 2
Peak PM Concentrations During CCOS Episodes

| Episode Dates | Peak Concentration (ug/m3) | | SJV Days Above 24-hr NAAQS | | Peak Site | |
|-------------------|-------------------------------|-------|-------------------------------|-------|-----------|-------|
| | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| 6/14/00 – 6/15/00 | 54 | 29 | 0 | 0 | COP | BAC |
| 7/30/00 – 8/2/00 | 69 | 21 | 0 | 0 | COP | FSF |
| 9/17/00 – 9/20/00 | 78 | 23 | 0 | 0 | HAN | BSE |

Additional Periods of Interest

Although PM2.5 and PM10 concentrations did not exceed the 24-hour standards, these periods are interesting because of elevated concentrations or some other reasons identified below. Table 3 summarizes PM measurements for these periods.

- February 2000 (2/7/00 – 2/11/00) – The PM2.5 concentrations at Merced, Visalia, and Bakersfield-California reached levels close to the standard.
- September 2000 (9/6/00 – 9/21/00) – Although uninteresting from a PM2.5 perspective, this was a PM10 fugitive dust event.
- October 2000 (10/12/00 – 10/27/00) – The PM2.5 concentrations were very close to the standard at Visalia. This period coincides with fall intensive CRPAQS monitoring, for which we have chemical composition data.
- Early November 2000 (11/2/00 – 11/9/00) – The PM2.5 concentrations were close to the standard at Fresno-1st and Bakersfield-California. This period also coincides with CRPAQS fall intensive monitoring, for which we have chemical composition data.

Table 3
Peak PM Concentrations During Periods of Interest

| Episode Dates | Peak Concentration (ug/m3) | | SJV Days Above 24-hr NAAQS | | Peak Site | |
|---------------------|----------------------------|-------|----------------------------|-------|-----------|-------|
| | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| 2/7/00 – 2/11/00 | 74 | 60 | 0 | 0 | VCS | MRM |
| 9/6/00 – 9/21/00 | 143 | 23 | 0 | 0 | BGS | BAC |
| 10/12/00 – 10/27/00 | 93 | 62 | 0 | 0 | COP | VCS |
| 11/2/00 – 11/9/00 | 104 | 56 | 0 | 0 | HAN | BAC |

Visibility Episodes in the Mojave Desert and Great Basin Valley

The two periods listed below include some of the highest PM2.5 concentrations measured in the Mojave Desert and Great Basin Valley as part of CRPAQS.

Table 4 shows the peak PM concentrations.

- Late April to Early May 2000 (4/18/00 – 5/12/00) – The second highest PM2.5 concentration at Mojave, 14 ug/m3, was captured during this period.
- Late July to Early August 2000 (7/23/00 – 8/10/00) – This period includes a CCOS ozone episode. The highest PM2.5 concentration at Olancho, 40 ug/m3, was captured on 7/29/2000.

Table 4
Peak PM Concentrations in the Mojave Desert and Great Basin Valley
During Visibility Episodes

| Episode Dates | Peak Concentration (ug/m3) | | SJV Days Above 24-hr NAAQS | | Peak Site | |
|-------------------|----------------------------|-------|----------------------------|-------|-----------|-------|
| | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| 4/18/00 – 5/12/00 | 36 | 26 | 0 | 0 | MOP | MOP |
| 7/23/00 – 8/10/00 | 70 | 40 | 0 | 0 | OLW | OLW |